

# THE PATHWAYS COALITION



H&M Group



**SCANIA**

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## RECOMMENDATIONS: POLICIES FOR THE TRANSFORMATION OF HEAVY-DUTY TRANSPORTS IN SWEDEN

Scania, the H&M Group, Ericsson, E.ON and Siemens are collaborating in The Pathways Coalition to make freight transport around the world fossil-free. The common vision is *to achieve fossil-free freight transport globally by 2050*, which is necessary for the world to meet the goals of the Paris Agreement.

Together we have identified four key areas for Sweden to reach the climate target for the transport sector of 70 percent reduction of CO<sub>2</sub> by 2030. To achieve this target, efficiency improvements and increased use of biofuels are needed in the short term; electrification and digitization are needed in the longer term. Companies can do a lot, but they also need political support. The Pathways Coalition has gathered recommendations for policy proposals in this document, to enhance dialogue and interaction with politicians, influencers, and other stakeholders who share our vision and goals.

# RECOMMENDATIONS: POLICIES FOR THE TRANSFORMATION OF HEAVY-DUTY TRANSPORTS

The Pathways Coalition was formed to accelerate the shift to fossil-free heavy transport. The starting point for the coalition is the paper *The Pathways Study: Achieving fossil-free commercial transport by 2050*<sup>1</sup>. The study concludes that it is possible to achieve fossil-free heavy transport within the time frame of the Paris Agreement, and that it is socio-economically beneficial. Achieving these objectives, however, requires an unprecedented rapid pace of transformation, which requires cooperation between companies, and between the industry and policy makers.

An important framework is the 'European Green Deal' presented by the President of the European Commission, Ursula van der Leyen<sup>2</sup>, with the vision of Europe becoming the first climate-neutral continent in the world by 2050. The European Green Deal represents a huge opportunity for strengthening the competitiveness of businesses operating on the European market.

Swedish legislation is influenced by, and implements, instruments established within the EU. There is a clear need for a review and update of relevant regulatory frameworks in the EU, where fossil fuels should not be seen as the norm. Examples of regulations that need a revision are the Renewable Energy Directive (RED), the CO<sub>2</sub> legislation for heavy-duty vehicles (does not currently include biofuels or longer and heavier vehicles), the Energy Tax Directive and state aid regulations.

Public procurement is one important driver for creating increased demand, and a larger market for fossil-free technologies. Requirements for fossil-free transport and implementation of effective follow-up systems should be prioritised in public procurement, both by municipalities, regions, and government authorities.

The Pathways Coalition has analysed the possibilities for transition to fossil-free transport on the Swedish market<sup>3</sup>. A comparison between the current status and the scenarios described in The Pathways Study to reach fossil-free heavy transport shows which gaps need to be bridged. Based on the gap analysis, The Pathways Coalition recommends several instruments in three complementary areas for the transition of heavy transport: **Efficiency** and **Increased use of biofuels** in the short term; and in the long-term, **Electrification**. To achieve success in both efficiency and electrification, **Digitization** is an important area where The Pathways Coalition has also identified important policy instruments.

The recommended policy instruments all aim to ensure that Sweden achieves the climate objective for the transport sector of 70 percent reduction of CO<sub>2</sub> by 2030, compared to 2010. The document was adopted by members of The Pathways Coalition on June 9, 2020.

## PROMOTING MORE EFFICIENT HEAVY TRANSPORT

The Pathways Study shows that it is possible, on the Swedish market, to achieve over 25 percent reduction in CO<sub>2</sub> emissions through only optimized transport systems and more efficient vehicles. Optimised transport systems aim to reduce the number of transports, which would also have other positive effects: reduced noise, reduced traffic congestion and reduced road surface wear and tear. In addition, better use of transport means lower costs for transport buyers.

The industry can take several measures to make transport more efficient:

- Enhanced focus on filling rate, to reduce the volume of air being transported. The Pathways Study shows a filling rate of just over 60 percent in Sweden. The target filling rate should be significantly higher.
  - Optimised transport systems, where a higher degree of digitization enables more efficient use of transport.
  - Co-distribution in major cities.
  - Increase the filling rate for return transport through collaborations with other transport buyers.
- Make demands on eco-driving and reduced driving speed for vehicles in route.
- Increased digitization enables real-time follow-up of set requirements.

<sup>1</sup> <https://www.thepathwayscoalition.com/resources/the-pathways-study-achieving-fossil-free-commercial-transport-by-2050/>

<sup>2</sup> [https://ec.europa.eu/commission/sites/beta-political/files/political-guidelines-next-commission\\_en.pdf](https://ec.europa.eu/commission/sites/beta-political/files/political-guidelines-next-commission_en.pdf)

<sup>3</sup> <https://www.thepathwayscoalition.com/resources/alternative-fuels-for-commercial-road-transportation-in-sweden/>

- Increased use of high-capacity vehicles (i.e. longer and heavier vehicles).
- Improved flexibility in delivery times enables transport companies to plan transport more efficiently.

### Policy proposals

A rapid transition to fossil-free transport also requires changes in regulation and legislation.

- **To introduce distance-based charges that differentiate by distance, vehicle type and type of fuel.**  
The aim of differentiated road charges is to create incentives for fewer and better transports, leading to a reduction in emissions. To provide the right control, such a charge must therefore differentiate between emissions from each vehicle. The charge should be linked to both distance and emissions caused by the transport. With today's options for control, verification, and follow-up, it should be possible to differentiate between different fuels in order to ensure that the system works both for electrified vehicles and for biofuels, e.g. by the use of a certification system.  
  
In addition, a distance-based charge could be varied between geographical areas and differentiated according to other aspects. In the future, for example, the demand for road electricity on certain road sections could be controlled to address the risk of power shortages. It is important to ensure that the charging system is in line with the polluter pays principle.
- **To implement high capacity vehicles by adjusting laws and regulations as well as by improving the road network to allow for HCV (BK4).**  
The proposal to allow increased use of high-capacity vehicles is currently being investigated. This measure is desirable because it would allow for higher volumes of goods that can be transported with the same emissions and would improve transport efficiency. Increased vehicle capacity should include both weight and height to optimise emission reductions. The necessary reinforcements of the road network by upgrading identified roads to BK4<sup>4</sup> must be implemented as soon as possible to avoid bottlenecks and reduced efficiency.
- **To introduce opportunities for speedier depreciation for heavy-duty transport vehicles with low CO<sub>2</sub> emissions**  
The total lifetime cost of a vehicle and uncertainties regarding the residual value of the vehicle are important factors in an investment decision. *The January agreement* (a joint agreement between the Social Democrats, the Green Party, the Centre Party and the Liberals signed in January 2019) includes a proposal for a premium for heavy-duty vehicles with lower CO<sub>2</sub> emissions. While this may lower the threshold in the shift to a more climate-friendly vehicle, it should be accompanied by opportunities for faster depreciation rates to reduce risk exposure for hauliers. Due to uncertainty about tax reductions, fuel availability and future policy initiatives, investments in environmental vehicles are considered as riskier.

### INCREASED USE OF BIOFUELS

Biofuels are an important component for quickly reducing CO<sub>2</sub> emissions, as demonstrated by the analysis of different scenarios in The Pathways Study. In addition, unlike the situation in many other countries, Sweden has good opportunities for domestic production of biofuels. In 2018, 91 TWh was used for the entire transport sector in Sweden<sup>5</sup>, of which about 30 TWh for heavy transport, blended with 23 percent biofuels. Analyses in various studies demonstrate that existing biomass would enable production of biofuels for the entire transport sector equivalent to 40-50 TWh by 2030<sup>6</sup>. The recently published biogas study<sup>7</sup> proposes a production target of 10 TWh of biogas for 2030. The total volume of biofuels must be allocated among several areas, but it is likely that in the short term the usage in

<sup>4</sup> The Swedish classification "Bärighetsklass BK4" (bearing capacity): roads with traffic up to 74 metric tons.

<sup>5</sup> "DRIVMEDEL 2018 Redovisning av rapporterade uppgifter enligt drivmedelslagen, hållbarhetslagen och reduktionsplikten" Swedish Energy Agency.

<sup>6</sup> "Potential för ökad tillförsel och avsättning av inhemsk biomassa i en växande svensk bioekonomi". 2016. Pål Börjesson.

<http://lup.lub.lu.se/record/68d4b9bd-160f-46fa-9072-70737c0e9b21>

<sup>7</sup> [https://www.regeringen.se/48f93e/contentassets/19fc575360724f2492bea2cb9e25b7e8/sou\\_2019\\_63\\_webb\\_rev.pdf](https://www.regeringen.se/48f93e/contentassets/19fc575360724f2492bea2cb9e25b7e8/sou_2019_63_webb_rev.pdf)

the heavy transport sector could increase significantly compared to today. As heavy transport is electrified, increased volumes of biofuels can be phased into other sectors that are more difficult to electrify, such as aviation and shipping.

The industry can take several actions to increase the use of biofuels today:

- A close dialogue and increased cooperation with transport companies, that collectively agree on a roadmap for their transport, would provide clarity to all actors in the value chain.
- By identifying the transport routes available to alternative fuelling infrastructure, companies can incorporate a gradual shift to biofuels into their fuel strategy.
- For distribution transports, there are already good opportunities to shift to fossil-free alternatives.
- Longer contract periods help carriers to compensate for increased risk in terms of vehicle residual values.

#### Policy proposals:

A rapid transition to fossil-free transport also requires changes in regulations and legislation that contribute to increased demand and supply of biofuels.

- **To secure the prolongation, under EU State aid rules, of the tax exemption measure from CO<sub>2</sub> and energy taxes on high-blended biofuels and biogas in Sweden .**

It is crucial that Sweden continues to be exempted from the EU state aid rules for continued tax exemption for high-blended biofuels and biogas. EU legislation and guidelines on state aid limit the possibilities for tax differentiation between fossil and renewable fuels. Since 2006, Sweden has been granted exception from these guidelines in periods of 2-3 years, and it has been possible to reduce CO<sub>2</sub> and energy taxes on biofuels as long as the market price is not below the price of fossil fuel. The state aid rules are due to be reviewed in 2022, but the Swedish exemptions will expire as early as 2020. If Sweden is forced to impose full CO<sub>2</sub> and energy taxes on high blend biofuels, market prices will from a commercial perspective be unacceptably high. The recently completed biogas study also states that continued tax exemption for biogas is of utmost importance for continued Swedish production. Therefore, the exemptions need to be extended for all biofuels that are eligible for exemptions today, i.e. also crop-based biofuels. Ideally, the EU guidelines would be changed from the ground up.

- **To influence the EU to move forward with a new bioenergy strategy and change relevant EU Directives accordingly.**

The current bioenergy strategy and bioenergy legislation, reflected in the Renewable Energy Directive (RED), are partly based on outdated information, such as the definition of indirect land use change and the approach to crop-based raw materials. As the EU moves forward in the work on the European Green Deal, the Swedish Government needs to participate actively to ensure that biofuels – which do not have a significant impact on food production (such as those produced from intermediate and secondary crops) or land use – reach full acceptance of being offset against national climate policy targets and can also continue to be granted state aid.

- **To decide on targets, both final and yearly, for the reduction of CO<sub>2</sub> emissions from fuels to be applied up until 2030 (the reduction quota).**

The government needs to make it clear to the market in the legislation what the annual incremental reduction targets under the reduction obligation will be until 2030. The Swedish Energy Agency's 2019<sup>8</sup> report defines levels that would be sufficient to reach the overall target of a 70 % reduction in transport-related CO<sub>2</sub> emissions and sets a target of a 65.7 % reduction for diesel by 2030 (excluding high blend biodiesel). This target should be set by 2020, to create additional incentives for investments in biofuel production as well as biofuel-adapted vehicles and tank infrastructure.

- **To revise the regulatory system to promote low blend of biofuels above the regulated reduction quota.**

Today, all biofuels used for blending into conventional fossil fuels are fully taxed. Therefore, blending larger volumes than those required to reach the minimum level is not feasible from a commercial perspective. The reduction obligation quota would therefore need to be revised so that blended volumes above the required

<sup>8</sup> "Kontrollstation 2019 för reduktionsplikten – Reduktionsplikten utveckling 2021-2030", Swedish Energy Agency.

levels, would be exempted from CO<sub>2</sub> tax, hence removing barriers for fuel suppliers aiming higher than the regulatory level.

- **To increase incentives that promote increased domestic production of biofuels.**

The measures mentioned above are necessary to increase the demand for sustainable biofuels. On the other hand, they will not directly address the fact that domestic biofuel production is undersized, while some of the imported biofuels are associated with significant sustainability problems. To increase the supply of biofuels, incentives for increased domestic production should be introduced. As an example, this could be done within the framework of the governmental investment program *Industriklivet*.

## ACTION PLAN FOR ELECTRIFICATION OF THE TRANSPORT SECTOR

The Pathways Study analyses of emission reductions and costs show that broad electrification offers the cheapest transition to zero emissions. Electric roads are an effective way to achieve large carbon dioxide reductions in a short time and are a shortcut to electrification of long-distance heavy-duty transport. For the effects to be realised by 2030, a plan must be established for the electrification of the road network and the roll-out of infrastructure. The recently announced *electrification commission* must step up its pace and take its starting point from the knowledge already established. In 2020, the Commission should submit an interim report with a concrete action plan to speed up the electrification of heavy-duty vehicles. In 2021 and 2022, the Commission's work should focus on contributing to the implementation of the Action Plan.

The industry should provide knowledge on how and where charging infrastructure should be established, based on transport patterns and fuel consumption. It is also important for companies to show that electrified transport is in demand.

### Policy proposals:

From a technical point of view, electrification of the transport sector is possible, and costs are reduced faster than anticipated. However, Sweden lacks a comprehensive strategy, and there is no concrete national plan for electrification. To move rapidly to fossil-free transport, a national action plan for electrification should be adopted by 2021. This should apply to both dynamic and stationary charging, which should be viewed as an addition with significant synergies rather than as competing alternatives.

- **To adopt a high priority comprehensive national plan in 2021 - outlining targets for electrification of commercial heavy-duty transport.**

- A national plan with defined targets and dates for electrification of heavy land-based transport, including a plan to ensure sufficient access to electricity from renewable energy.
- A decision should be taken on a clear model for financing the installation and operation of charging infrastructure.
- An investment programme for stationary charging for heavy-duty vehicles, specifically targeting sparsely populated areas.
- Ensuring electrical capacity adjacent to major highways, both for dynamic and stationary charging. As the issue of electricity capacity does not depend on the dynamic and stationary charging infrastructure, regional grid owners should already be given directives to implement the expansion of electricity along the major highways, the E6, E4 and E20. Given the complexity of network deployment projects, this step should not be on hold for a decision on a national plan for electrification.

- **To promote increased cooperation within the EU regarding e-highways.**

Sweden has initiated cooperation with Germany on electric roads. This is defined in a three-year innovation agreement between the Swedish Transport Administration and the German Government. Sweden also has a strategic innovation partnership with France where the part related to "development of green solutions for mobility" includes enhanced cooperation on electric roads. Hence, there are good conditions for increased cooperation at EU level.

- Sweden should push for a more vital dialogue within the EU to establish common frameworks for dynamic charging infrastructure.
- Sweden should work to reach agreements on common standards and technology choices with those EU countries that are also planning an expansion of dynamic charging infrastructure.
- Cooperation with Germany and France should be deepened to achieve real synergies.
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## DIGITIZATION OF THE TRANSPORT SECTOR

To enable more efficient transport and electrification of the transport sector, increased digitization is an important component. Real-time communication between vehicles enables increased filling rates and better route planning. Large local power variations are the results of the connection and disconnection of large vehicles, and the need for control. When a larger number of heavier vehicles are to be connected to and from the grid, there is a risk of large and rapid power variations and instability in the grid unless both vehicles and charging infrastructure are regulated. Therefore, infrastructure and vehicles need fast connectivity and control. Here, 5G technology can contribute with unique opportunities. Unlike previous mobile standards (e.g. 4G used today), 5G can manage data locally and therefore control both charging infrastructure and vehicles at a millisecond level. This provides 5G with new opportunities to control electricity grids and charging infrastructure so that the share of renewable energy and electric vehicles can be increased without the electricity grid becoming unstable. Therefore, Sweden should see digitization as an enabler for faster and safer expansion of local renewable energy and fossil-free transport.

### Policy proposals:

- **To prepare for deployment of charging infrastructure and increased connectivity - simultaneously.**  
Electrified vehicles will be part of the grid, where the system would benefit from real-time data, for example, to control and regulate battery charging in a more optimized way. Vehicles can then contribute to load balancing and power allocation in the grid. 5G coverage along the Swedish road network is therefore important for a more efficient electrified transport system. Hence, policies should provide clear incentives for broad and rapid national 5G expansion.
- **To push the development of common standards for data sharing and connected vehicles within the EU.**  
The *Internet of Things (IoT)* entails that different objects can communicate with each other and share data. So far there are no common standards for data sharing, or how vehicles or other objects should be connected. Since standards are lacking, today's systems are more comparable to individually connected silos. For the transport sector, the development of industry-wide standards for sharing data should be pushed by Sweden within the EU. In addition, a standard offers SMEs greater opportunities to reach the market.